

# CHEMERSATZ

OFFICIAL NEWSLETTER OF DEPARTMENT OF CHEMICAL ENGINEERING  
JUNE 2021 - NOVEMBER 2021, Newsletter - 03



## STUDENT ASSOCIATION OF CHEMICAL ENGINEERING

### Student Editors

Mr Gokul Jothi R (III Year)

Mr Antony Abrahaam A (III Year)

### Coordinator

Ms Dineshkumar M, AP

### Convener

Dr Seenuvasan M, HoD



THERE ARE FAR  
FAR **BETTER**  
**THINGS AHEAD**  
THAN ANY WE  
LEAVE BEHIND

*C.S. Lewis*

# WHAT CHEMICAL ENGINEERS DO?

PRESERVE ENVIRONMENT | ENERGY GENERATION | MATERIAL  
ADVANCEMENT | BIOMEDICINE ENHANCEMENT |  
ELECTRONICS IMPROVEMENT | ENHANCE FOOD PRODUCTION

## **Vision of the Department**

To produce dynamic Engineers with excellence in process operations and problem-solving skills to meet the challenges and drive for the growth of the nation.

## **Mission of the Department**

- To foster engineers with quality engineering education to meet the challenging and developing technology in the chemical sectors.
- To prepare students for leadership in diverse careers, create knowledge and provide multidisciplinary solutions to broad societal problems.
- To emphasize on the practical aspects of research, innovation and ensuring the realities of sustainable development.



## **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

Graduates of Chemical Engineering will be able to:

- Participate as leaders in their fields of expertise and in activities that support service and economic development nationally and throughout the world.
- Pursue continued life-long learning through professional practice, research and training programs in the field of chemical engineering and science.
- Solve real-life problems in a broad perspective to fulfill ethical, economic, environmental and social responsibilities.

## **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

Graduates of Chemical Engineering will be able to:

- Apply the knowledge of unit processes and operations for the design of Chemical plant.
- Acquire working knowledge of process safety and environment issues in Chemical Processes.
- Innovate and integrate the new ideas of Chemical Engineering processes as a team for the complex problems and development of chemical industries.

# **CHEMERSATZ**

## **TABLE OF CONTENTS**

- 03 Memorandum of Understanding
- 04 Expert Lectures
- 05 Faculty Achievements
- 07 AICTE Funded National Seminar
- 08 Continuous Learning
- 10 Research
- 11 Students Corner

# Memorandum of Understanding



**On 30.07.2021, Department of Chemical Engineering signed a MoU with Red Spectra Instruments Private Limited, Chennai and World Innovation Technologies, Coimbatore.**



**On 02.11.2021, 2021 Department of Chemical Engineering signed a MoU with Makeover paints, Cochin.**

# Expert Lectures

**Hindusthan**  
College of Engineering & Technology  
(An Autonomous Institution)

Department of Chemical Engineering & Food Technology  
in Association with Entrepreneurship Development Cell  
**IIC Self Driven Activity**

**Mr Prasanth Rajeev**  
FOUNDER AND CHIEF EXECUTIVE OFFICER  
TRAVANCORE FOODS AND BEVERAGES

**Mr Sajeev Velappan Nair**  
FOUNDER AND CHIEF OPERATING OFFICER  
TRAVANCORE FOODS AND BEVERAGES

E-Certificate will be provided to all the participants

**Webinar on**  
**"TRICKS AND TECHNIQUES TO START A STARTUP"**

30 - June - 2021  
11:00 AM - 12:00 PM

**Coordinator(s)**  
Er Neethu C S, AP/FT  
Er Induja P, AP/Chem

**Convenor**  
Dr Seenuvasan M  
Professor & Head/Chem

**CEO & Principal**  
Dr Karunakaran K

Valley Campus, Pollachi Highway, Coimbatore  
[www.hicet.ac.in](http://www.hicet.ac.in)

<https://meet.google.com/yiy-uaqu-boq>

3. Do market research

- You can conduct interviews
- You can also offer surveys or questionnaires
- most common mistakes in market research

- Using only secondary research.
- Using only online resources.
- Surveying only the people you know.

On 30th June 2021, Ms Induja P, AP/Chem Engg., Organized a Webinar (IIC Self Driven Activity) in Association with Entrepreneurship Development Cell on "Entrepreneurship and Business Opportunities in Food and Chemical Industry".

**Hindusthan**  
College of Engg & Tech  
(An Autonomous Institution)

DEPARTMENT OF CHEMICAL ENGINEERING  
IN ASSOCIATION WITH  
CHEMSARTZ  
(STUDENT CHAPTER OF CHEMICAL ENGINEERING)

ORGANIZES

**Webinar on**  
"Current Trends in Nanotechnology and its Applications in Chemical Industries"

**Coordinator(s)**  
Ms Induja P, AP/Chem Engg  
Mr Rajkumar A, AP/Chem Engg

**Convenor**  
Dr Seenuvasan M  
Professor & Head/Chem Engg

**CEO & Principal**  
Dr Karunakaran K

**Mr Samraj S**  
Assistant Professor | Chemical Engg  
MVJ College of Engineering, Bangalore

17 - June - 2021  
10.30 AM - 11.30 AM

<https://meet.google.com/equ-shqy-uo>

Valley Campus, Pollachi Highway, Coimbatore

Preservation effect of AgNPs impregnated polymeric film matrices [A3-Ag] on vegetable (a-e) uncoated & (f-h) coated

DAY - 1 DAY - 4 DAY - 8 DAY - 12 DAY - 15

UNCOATED COATED

Pullagoundampatti, Tamil Nadu, India  
@LULURU Çmçç, Pullagoundampatti, Tamil Nadu 637104, India  
Lat N 11° 31' 15.6828"  
Long E 77° 44' 31.4808"  
17/06/21 10:48 AM

On 17th June 2021, Ms Induja P, AP/Chem Engg., Organized a Webinar on "Current Trends in Nano Technology and its Application in Chemical Industries"

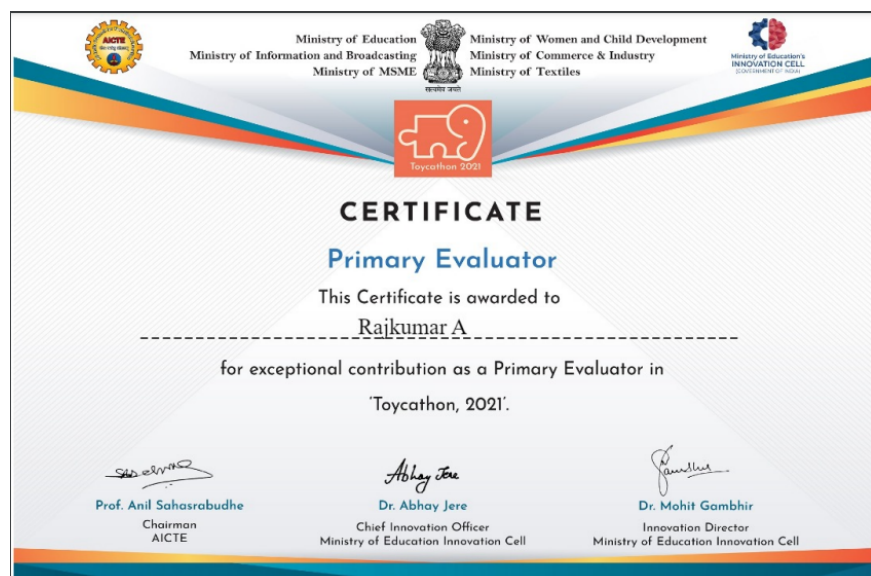
# Faculty Achievements



**Department of Chemical Engineering awarded as Best Emerging Department** during Teachers Day Celebration 2021, Hindusthan College of Engineering and Technology, Coimbatore on 15.09.2021.

**Dr M Seenuvasan** was awarded as **Best Research Paper Award** for the Academic Year 2020-21 on Teachers Day Celebration 2021, Hindusthan College of Engineering and Technology, Coimbatore on 15.09.2021.

**Mr Rajkumar A** awarded for exceptional contribution as a **Primary Evaluator in Toycation, 2021** organized by AICTE, Ministry of Education, Ministry of Women and Child Development, Ministry of Information and Broadcasting, Ministry of Commerce and Industry, Ministry of MSME and Ministry of Textiles Government of India.

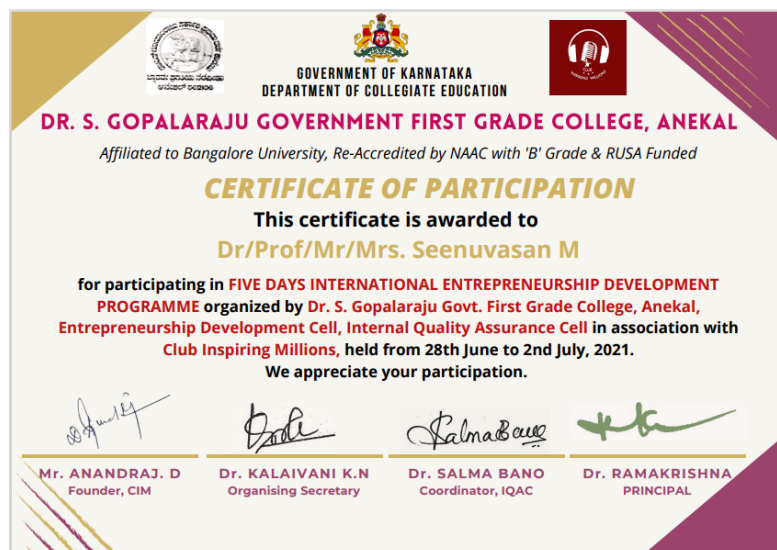


# Faculty Achievements



On 02.08.2021,  
**Dr Seenuvasan M**  
appointed as member  
of Technical Advisory  
Team by Redspectra  
Instruments Private  
Limited, Chennai.

28.06.2021 to 02.07.2021,  
**Dr Seenuvasan M**  
participated in 5 days  
International  
Entrepreneurs  
Development Programme  
organized by Dr. S.  
Gooplaraju Govt First  
Grade College, Karnataka.





# AICTE Funded National Seminar

**Patron**  
**Dr Karunakaran K**  
 CEO & Principal

**Co-Patron(s)**  
**Dr Magudeswaran P N**  
 Dean-Academics  
**Dr Jaya J**  
 Dean

**Convener**  
**Dr Seenuvasan M,**  
 Professor & Head Chem Engg & Food Tech

**Co-Convener(s)**  
**Dr Sridhar N**  
 Assistant Professor & Head of Agri Engg  
**Dr Jeevarathinam G**  
 Assistant Professor, Food Tech  
**Dr Gomathi B,**  
 Associate Professor, IT

**Coordinator(s)**  
**Er Induja P**  
 Assistant Professor, Chem Engg  
**Er Neethu C S**  
 Assistant Professor, Food Tech  
**Er Chinju Saju**  
 Assistant Professor, Agri Engg

For Registration:  
<https://forms.gle/shmd9jn7a89r8xa19>  
 (No registration Fee)



E-Certificate will be provided to all the active participants



**HINDUSTHAN**  
**COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 (An Autonomous Institution)  
 Valley Campus , Pollachi Highway, Coimbatore - 32



**DEPARTMENT OF AGRICULTURE ENGINEERING**  
**CHEMICAL ENGINEERING & FOOD TECHNOLOGY**  
 IN ASSOCIATION WITH

**TECHNICAL SOCIETY CLUB OF HICET**  
 (Club for Promoting Interests, Creativity and Ethics among Students under AICTE-SPICES)  
 Organizes

**AICTE FUNDED NATIONAL SEMINAR ON**

**"Climate Change Resolution for Sustainable Development"**

**31 JULY 2021**

11.30 AM – 12.30 PM



**Dr Sunita Varjani**  
 Scientific Officer,  
 Gujarat Pollution Control Board, Gandhinagar, Gujarat, India.  
 Topic: Municipal Solid Waste Management and the Climate Change: A Global Perspective

1.30 PM – 02.30 PM



**Dr Selvaraju Narayanasamy**  
 Assistant Professor,  
 Department of Biosciences and Bioengineering,  
 Indian Institute of Technology, Guwahati, India.  
 Topic: Water Purification Technologies from Lab Scale to Pilot Scale

02.30 PM – 03.30 PM



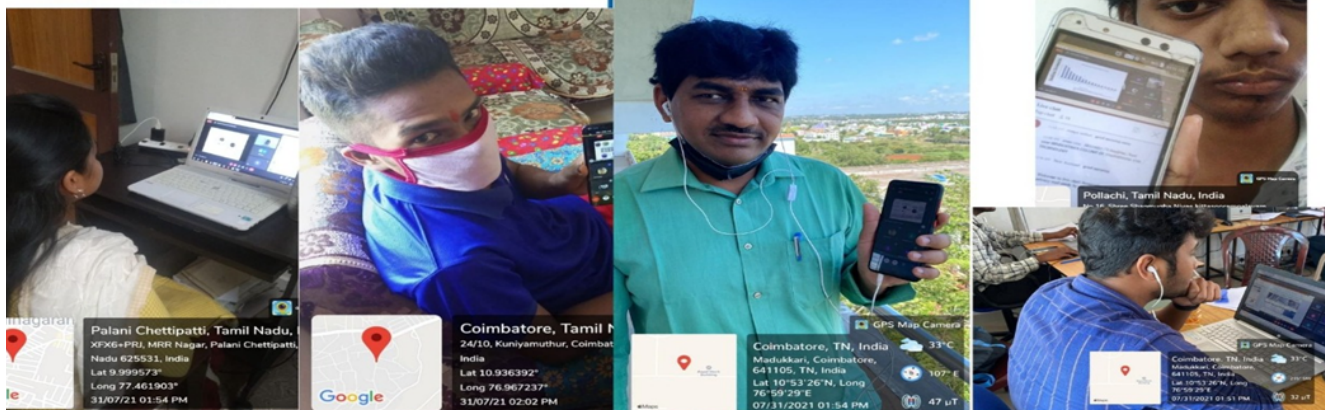
**Dr Balathanigaimani M S**  
 Associate Professor,  
 Department of Chemical Engineering,  
 Rajiv Gandhi Institute of Petroleum Technology,  
 Uttar Pradesh, India.  
 Topic: Adsorbed Gas Storage System for Vehicular Application

**HINDUSTHAN**  
**COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 (An Autonomous Institution)  
 Valley Campus , Pollachi Highway, Coimbatore - 32

**DEPARTMENT OF AGRICULTURE ENGINEERING**  
**CHEMICAL ENGINEERING & FOOD TECHNOLOGY**  
 IN ASSOCIATION WITH  
**TECHNICAL SOCIETY CLUB OF HICET**  
 (Club for Promoting Interests, Creativity and Ethics among Students under AICTE-SPICES)  
 Organizes

**AICTE FUNDED NATIONAL SEMINAR ON**  
**"Climate Change Resolution for Sustainable Development"**  
**31 JULY 2021**

**Dr Selvaraju Narayanasamy**  
 Assistant Professor,  
 Department of Biosciences and Bioengineering,  
 Indian Institute of Technology, Guwahati, India.  
 Topic: Water Purification Technologies from Lab Scale to Pilot Scale

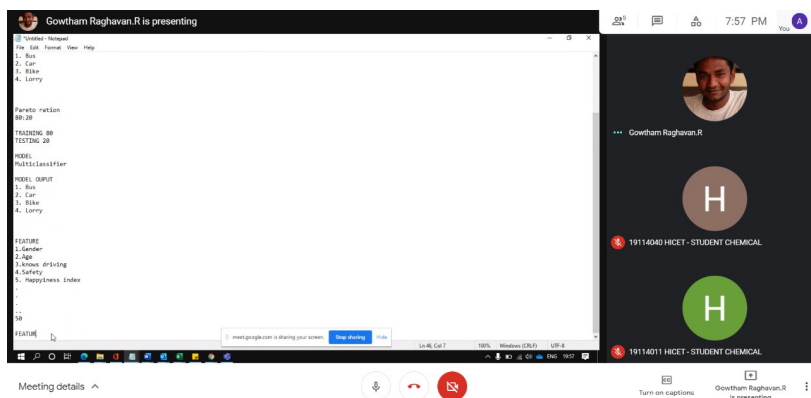


On 31st July 2021, Ms Induja P, AP/Chem Engg., Organized AICTE Funded National Level Seminar on "Climate Change Resolution for Sustainable Development"

# Continuous learning

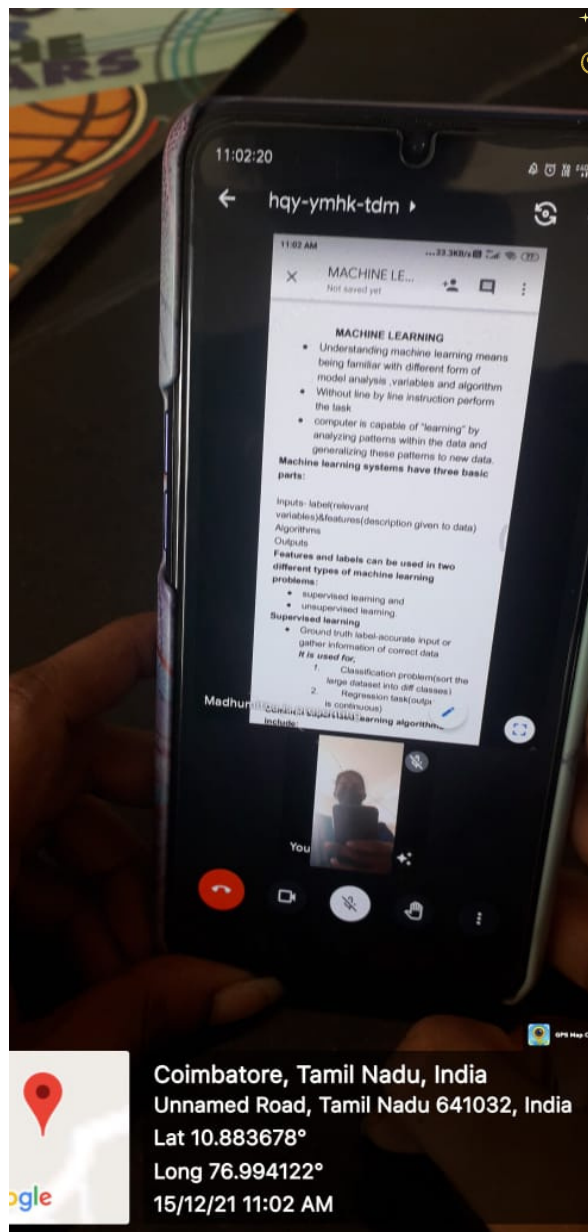
S.No	Name & Designation	Title of the seminar/conference	Organized by	Date	Duration
1.	Ms P Induja	International Virtual seminar on Dairy by product processing and applications	Chemical Engineering & Food Tech, Hindusthan College of Engineering and Technology	19.07.2021	1
2.	Ms P Induja	Virtual seminar on Innovative fruits and vegetable products fit for market	Chemical Engineering & Food Tech, Hindusthan College of Engineering and Technology	27.07.2021	1
3.	Mr Dineshkumar M	Climate Change Resolution for Sustainable Development	HiCET, Coimbatore	31.07.2021	1
4.	Mr Rajkumar A	Climate Change Resolution for Sustainable Development	HiCET, Coimbatore	31.07.2021	1
5.	Ms Induja P	Climate Change Resolution for Sustainable Development	HiCET, Coimbatore	31.07.2021	1
6.	Dr Seenuvasan M	Climate Change Resolution for Sustainable Development	HiCET, Coimbatore	31.07.2021	1
7.	Ms P Induja	Five days FDP on Green Technology & Sustainability Engineering	Bharati Vidyapeeth College Of Engineering, Navi Mumbai	23.08.2021 to 27.08.2021	5
8.	Dr Seenuvasan M	AICTE Sponsored done week STTP on Recent Advances in sot computing Techniques for Optimizing Industrial Process	Annamalai university	27.09.2021 to 02.10.2021	6
9.	Ms C. Fetcia Jackulin	AICTE Sponsored done week STTP on Recent Advances in sot computing Techniques for Optimizing Industrial Process	Annamalai university	27.09.2021 to 02.10.2021	6
10.	Dr Seenuvasan M	AICTE Sponsored one week STTP on optimization, Modelling, Simulation for Process Industries	Annamalai university	04.10.2021 to 09.10.2021	6
11.	C. Fetcia Jackulin	AICTE –ATAL – FDP on Materials and Techniques for the Treatment of Wastes	Anna University, Chennai	04.10.2021 to 08.10.2021	5

# Continuous learning



03.05.2021 to 08.05.2021 - **Mr Rajkumar A** underwent online internship at **Red Spectra Instruments Private Limited, Chennai. (Activity under MoU)**

29.11.2021 to 04.12.2021 - **Ms Drisya G Chandran** underwent online internship at **Red Spectra Instruments Private Limited, Chennai. (Activity under MoU)**



08.11.2021 to 13.12.2021 - **Mr Dineshkumar M** underwent online internship at **World Innovative Technologies, Coimbatore. (Activity under MoU)**

# Research



Chemosphere  
Volume 285, December 2021, 131480



## Kinetics, equilibrium and thermodynamic investigations of methylene blue dye removal using *Casuarina equisetifolia* pines

Helly Chandarana <sup>a</sup>, Ponnusamy Senthil Kumar <sup>b</sup>, Muthulingam Seenuvasan <sup>c</sup>, Madhava Anil Kumar <sup>a, d, e</sup>

Show more

+ Add to Mendeley Share Cite

<https://doi.org/10.1016/j.chemosphere.2021.131480>

[Get rights and content](#)

### Highlights

- Biosorbent from *Casuarina equisetifolia* pine had affinity for Methylene Blue dye.
- MB biosorption mechanism onto the adsorbent was explained.
- Pseudo-first order and Temkin model governed the dye removal by prepared biosorbent.



Latin American Applied Research

An International Journal - ISSN: 0327-0793 (print) 1851-8796 (online)



Announcements Archives Volume Listings (until 2013) Last accepted papers About

Home / Archives / Vol. 51 No. 3 (2021): Latin American Applied Research / Chemical Engineering

## MAGNETITE EMBEDDED BIOCHAR AS NANO-SORBENT FOR EFFECTIVE ADSORPTION OF TEXTILE DYE

M. Seenuvasan

Department of Chemical Engineering, Hindusthan College of Engineering and Technology

Carlin Geor Malar

Department of Biotechnology, Rajalakshmi Engineering College, Thandalam, India

S.B. Ron Carter

Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Thandalam, India

S. Praveen

DOI: <https://doi.org/10.52292/lj.jaar.2021.645>

Keywords: Adsorption; Biochar; Artificial Neural Network; Kinetics; Isotherms

pdf html

Published  
2021-06-25

Issue  
[Vol. 51 No. 3 \(2021\): Latin A Applied Research](#)


Section  
Chemical Engineering

License



Review | [Published: 23 October 2021](#)

## Methods for chemical conversion of plastic wastes into fuels and chemicals. A review

[Fetcia Jackulin Christopher](#), [Ponnusamy Senthil Kumar](#) , [Dai-Viet Nguyen Vo](#), [Femina Carolin Christopher](#) & [Lakshmi Priya Jayaraman](#)

[Environmental Chemistry Letters](#) (2021) | [Cite this article](#)

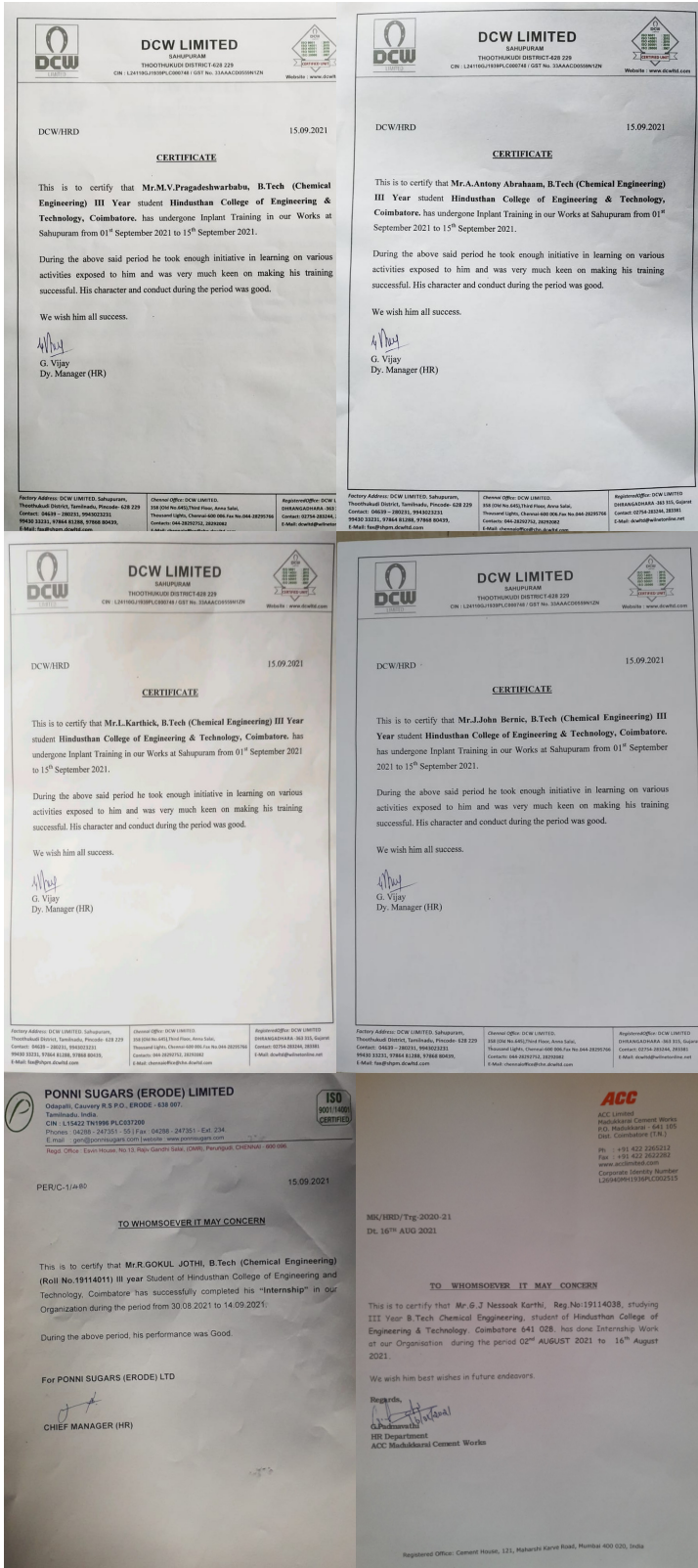
134 Accesses | [Metrics](#)

### Abstract

Plastics are utilized in various materials that are useful in everyday life. As the usage of plastics increases, the disposal of plastic materials has become a major issue, calling for recycling methods. Here, we review the different methods to recycle plastics, with focus on catalytic cracking. We present catalysts, cracking mechanisms, and we compare the various treatment methodologies. Several attempts were made by researchers to increase the efficiency of the cracking process using different catalysts and reactors. Many studies reveal high quality products are obtained by catalytic cracking, which consumes low energy and produces lesser residues when compared to other treatment technologies.

# Students Corner

## Internship / Inplant Training



- Mr Pragadeshwar Babu M V,
- Mr Jouhn Bernic J,
- Mr Karthick L
- Mr Antony Abrahaam A

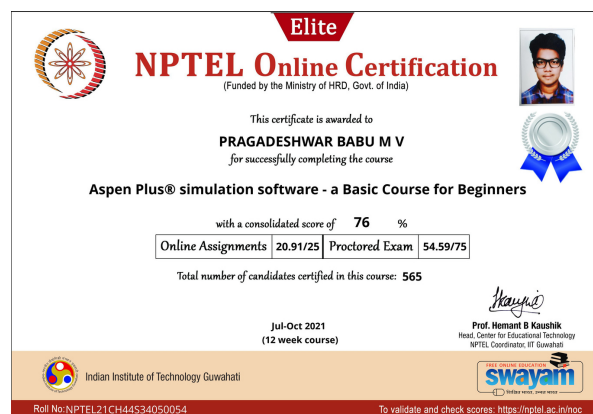
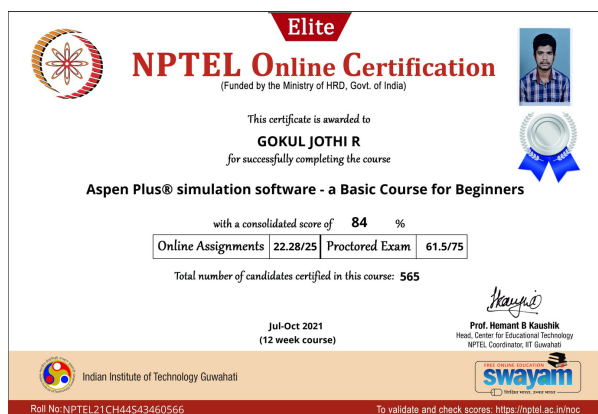
underwent Inplant Training in DCW Limited, Thoothukudi from 01.09.2021 to 15.09.2021 (15 days).

Mr Gokul Jothi R successfully completed his Internship in Ponni Sugar Limited during the period 30.08.2021 to 14.09.2021 (15 days).

Mr Nessoak Karthi G J, III year Chemical Engineering done Internship Training at ACC Limited, Coimbatore from 02.08.2021 to 16.08.2021 (15 Days).

# Students Corner

## Continuous Learning



**Mr Gokul Jothi R** of III year Chemical Engineering obtained a Elite certificate in NPTEL Online Course by completing **Aspen Plus Simulation Software - A Basic Course for Beginners with 84% Marks**

**Mr Karthick L** of III year Chemical Engineering obtained a Elite certificate in NPTEL Online Course by completing **Aspen Plus Simulation Software - A Basic Course for Beginners with 78% Marks**



**Ms Kirubashini E** of III year Chemical Engineering obtained a Elite certificate in NPTEL Online Course by completing **Aspen Plus Simulation Software - A Basic Course for Beginners with 60% Marks**

**Mr Pragadeswar Babu M V** of III year Chemical Engineering obtained a Elite certificate in NPTEL Online Course by completing **Aspen Plus Simulation Software - A Basic Course for Beginners with 76% Marks**

**J John Bernic** of III year Chemical Engineering obtained a Elite certificate in NPTEL Online Course by completing **Principles and Practices of Process Equipment and Plant Design with 66% Marks**



Students of II and III year B.Tech Chemical Engineering Students actively participated and completed in the **Learnathon courses**.

### Overall Certificate Drive Link:

<https://drive.google.com/drive/u/0/folders/1cpZkloFfoW1AISIX8dKFzsOj7DOQuNVu>



Cisco Networking Academy

## Cybersecurity Essentials

For completing the Cisco Networking Academy® Cybersecurity Essentials course, and demonstrating the following abilities:

- Describe the tactics, techniques and procedures used by cyber criminals.
- Describe the principles of confidentiality, integrity, and availability as they relate to data states and cybersecurity countermeasures.
- Describe technologies, products and procedures used to protect confidentiality, ensure integrity and provide high availability.
- Explain how cybersecurity professionals use technologies, processes and procedures to defend all components of the network.
- Explain the purpose of laws related to cybersecurity.

**Surya .A**

Student

**ICT Academy**

Academy Name

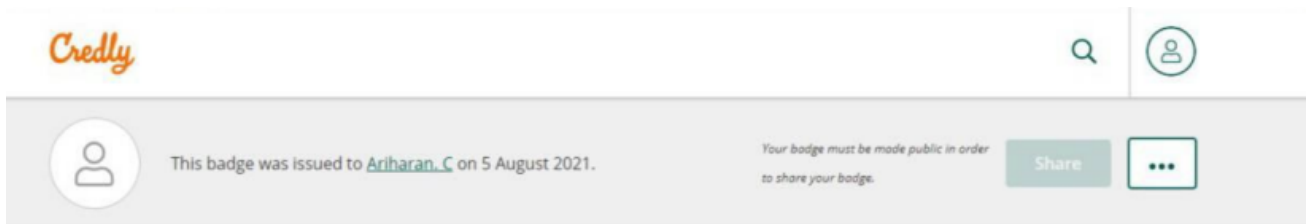
**India**

Location

**25 Aug 2021**

Date

*Laura Quintana*  
Laura Quintana



## IT Academy: Network Virtualization Concepts

Issued by [VMware](#)

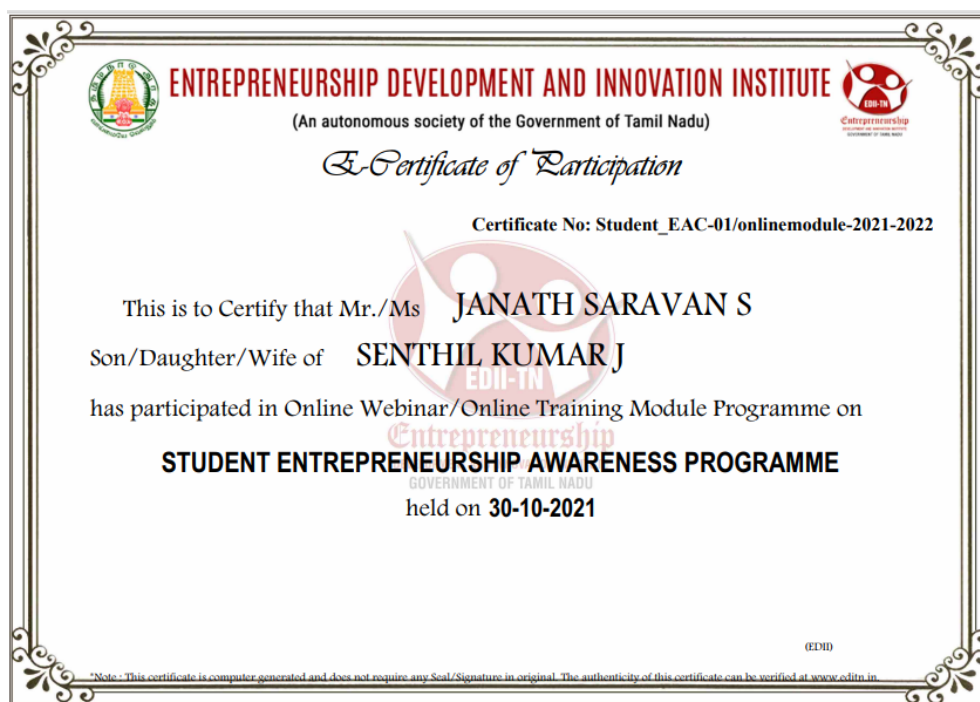
The Network Virtualization Concepts badge holder is an entry level professional that has the basic understanding of network virtualization, the Software-Defined Data Center, and basics of NSX architecture. This badge holder can understand how to bridge physical with virtual. More...

### Skills



# Students Corner

## Extension Activities



Students of **II and III year B.Tech Chemical Engineering Students (95)** completed a Online Webinar/Online Training Module Programme on **Student Entrepreneurship Awareness Programme organized by** Entrepreneurship Development and Innovation Institute, An Autonomous society of Government of Tamilnadu.

### Students Certificate Drive Link

II year - <https://drive.google.com/drive/u/0/folders/1ZG3uNC6QaVSi9VgFkKJZRb6ypDGDYSEs>

III Year - [https://drive.google.com/drive/u/0/folders/1UHhHkwIKGnr26xhMnGVQilB9aeUgd\\_vt](https://drive.google.com/drive/u/0/folders/1UHhHkwIKGnr26xhMnGVQilB9aeUgd_vt)



# Academic Toppers



**Pragadeshwar Babu M V**  
CGPA - 97.6 (upto IV Semester)



**Gokul Jothi R**  
CGPA - 96.9 (upto IV Semester)



**Karthick L**  
CGPA - 94.9 (upto IV Semester)



**Sugashini K**  
CGPA - 93.6(upto IV Semester)



**Kirubashini E**  
CGPA - 92.7 (upto IV Semester)



**Harishkumar M**  
CGPA - 98.2 (upto II Semester)



**Abisha J**  
CGPA - 96.9 (upto II Semester)



**Asrith M**  
CGPA - 96.7 (upto II Semester)

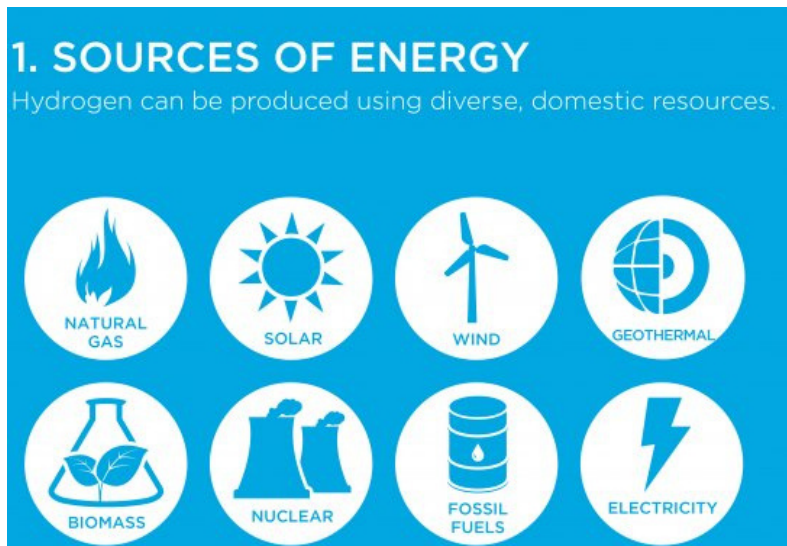


**Muhammed Jaseem**  
CGPA - 96.4 (upto II Semester)



**Muhammed Roshan A K**  
CGPA - 96.4 (upto II Semester)

# Hydrogen Rush Could Shift World Energy Order



In a small room in Delft, Netherlands, a group of engineering students ponder what energy systems might look like in 2050. Across the North Sea in Stavanger, Norway, students of international relations consider how the world order might shift if there were universal access to renewable energy.

They're undertaking a green policy simulation: each represents a fictional country grappling with the energy transition and lays out how they would deliver it, balancing the interests of their citizens with those of the world. Some of the fictional countries are dependent on fossil fuels, others are blessed with abundant renewables.

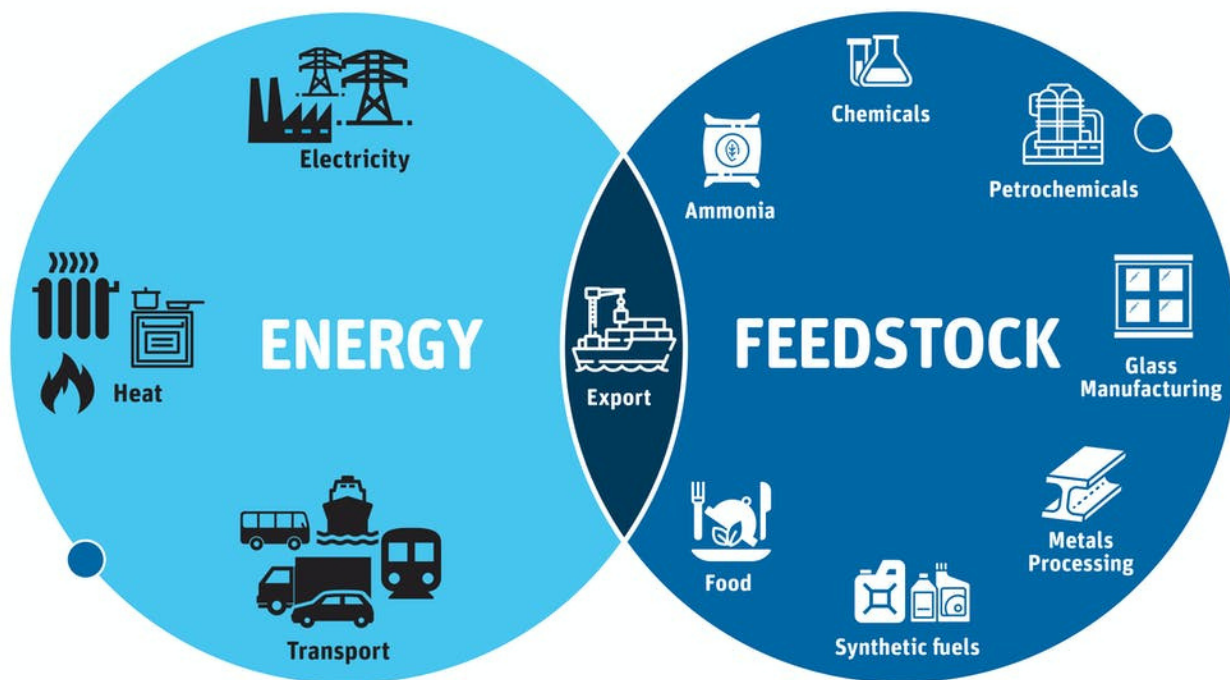
It's a useful tool to teach the complexity of trade-offs in energy transitions and emission reductions. How could the world order shift if countries not known for renewable energy production or export ended up dominating it?

The energy transition's current darling, hydrogen, has moved from the world of engineering to politics. Governments around the world have already committed more than USD 70 billion to stimulate the hydrogen industry.

Hydrogen production is moving from grey: using natural gas, to blue: with carbon capture, and green: produced by electrolysis using renewable electricity. Right now, green hydrogen isn't economically viable.



Could hydrogen become the new oil? Energy analysts predict oil demand could peak soon after 2025, and by 2050, hydrogen could meet up to 24 per cent of the world's energy needs. Considering the dominant split of energy today - oil 30.9 per cent, coal 26.8 per cent and gas 23.2 per cent - a 24 per cent share is substantial enough to affect world order.

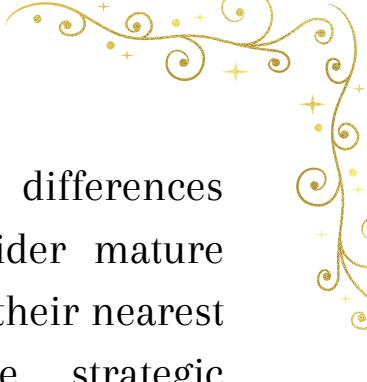
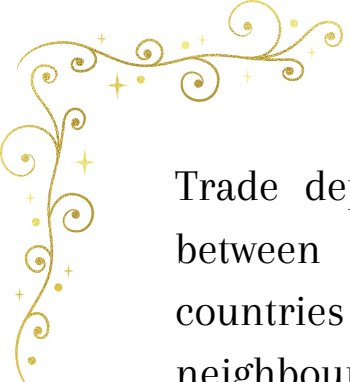


Yet to work out how the geopolitics could play out it's worth asking three questions. One: how much hydrogen will countries use, two: how much will countries trade, and three: how fast will the change happen? Only then can you establish where hydrogen might fit in the global energy mix.

The obvious early movers are heavy industry looking to decarbonise, industrial shipping and heavy vehicles. Large power utilities are eyeing it off for storage. All of these players are largely linked to the existing oil and gas industry.

As countries transition to sustainable energy, oil and gas led economies could lose USD7 trillion by 2040, the International Energy Agency has warned. Hydrogen could give them a lifeline to extend their business model.

Still, electricity is expected to be the energy carrier of the future, powering most other applications in a green world.



Trade depends on domestic production capacity, cost differences between countries and strategic considerations. Consider mature countries that don't want to be reliant on electricity from their nearest neighbours: hydrogen imports could deliver the strategic diversification they're looking for. Hydrogen simply allows for more long-distance, more flexible, trade.

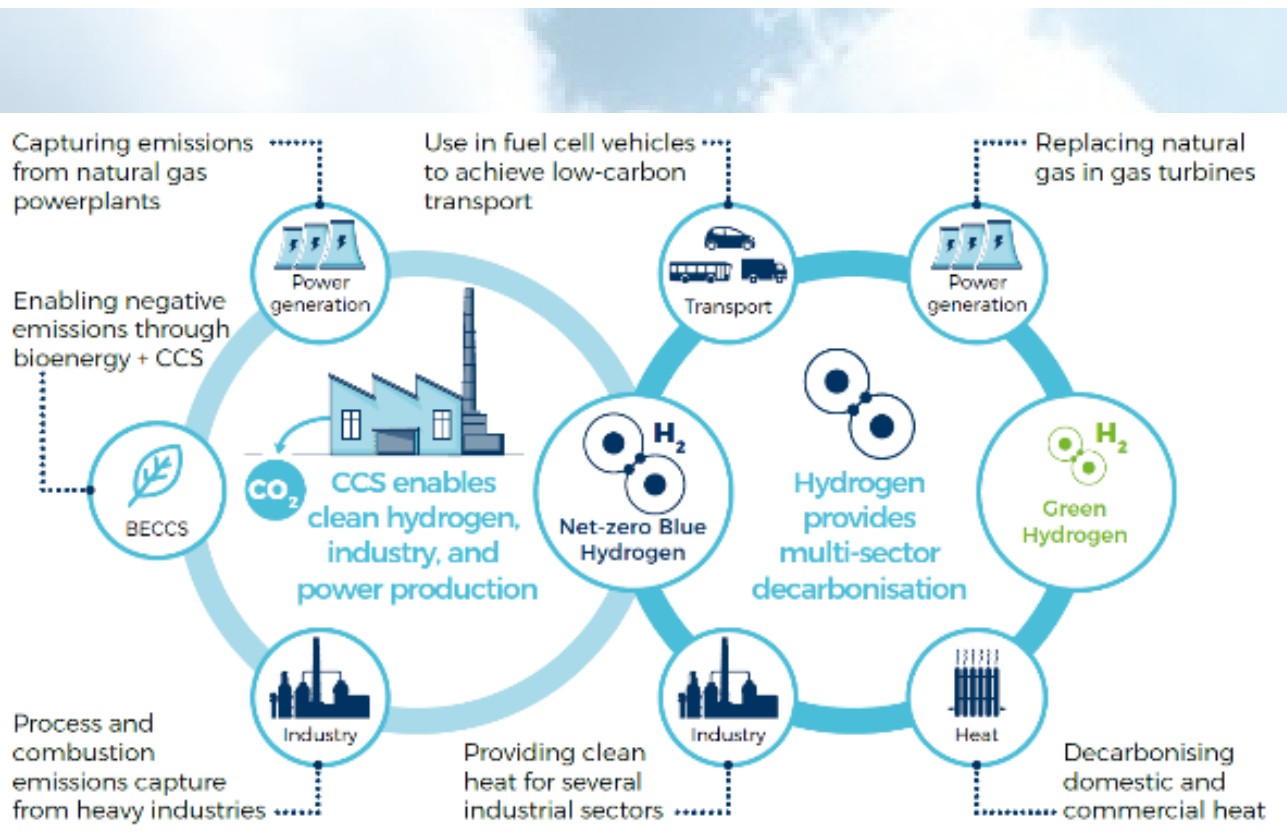
An East Asian hydrogen market stretching between India, Japan and Australia is feasible. Similar markets could develop in the Americas or between the Middle East and Europe.

For countries, four scenarios are likely as sustainable energy technology evolves. With the technology, opportunities open up for export of energy, know-how and materials.

A fossil fuel exporter becomes a sustainable energy exporter - they win some and lose some.

A fossil fuel exporter becomes a sustainable energy importer, a lose lose.

A fossil fuel importer becomes a sustainable energy exporter, going from a position of dependence to revenue. A win win.

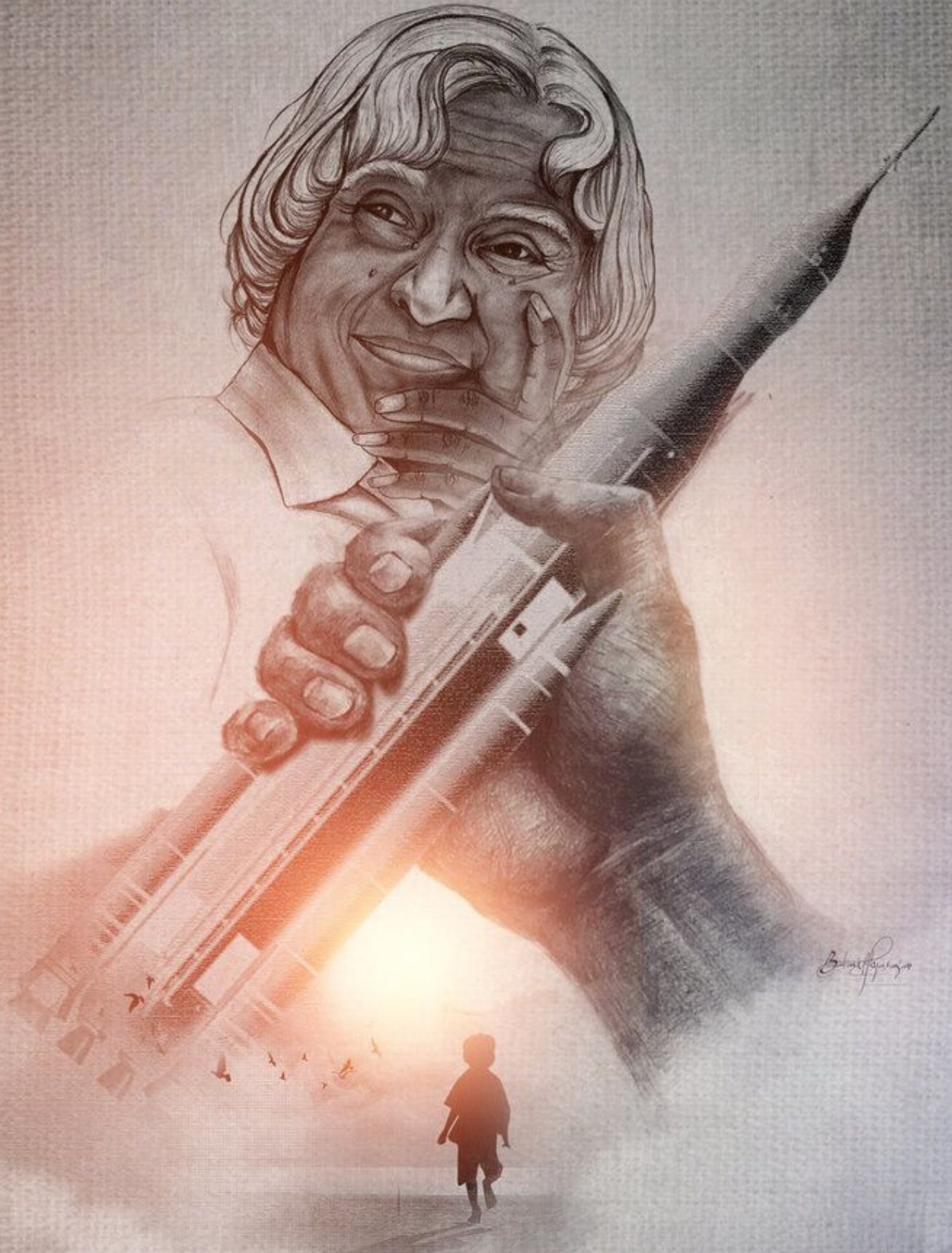


And lastly, the position most countries now find themselves in, a fossil fuel importer misses the opportunity and moves to being a sustainable energy importer.

It's a high risk, high reward scenario for governments betting on green hydrogen ahead of it being economically viable. Then again, invest too little too late and they risk wasting money while still ending up a laggard.

The only certainty is that not every country will benefit equally from the transition, and those losing might not be the usual suspects.

F 53000  
BALA VIDHYA SAGAR



*Bala Vidhya Sagar*

# Dr. Abdul Kalam

EVERY AGE HAS A HERO AND EVERY HERO HAS A STORY

BALA VIDHYA SAGAR- DESIGN

# A Little History



Vikram Ambalal Sarabhai was an Indian physicist and astronomer who initiated space research and helped develop nuclear power in India was student of Sir C V Raman Indian physicist known for his work in the field of light scattering "Raman effect"



4 YEAR B.TECH IN CHEMICAL ENGINEERING

@

***HINDUSTHAN***

COLLEGE OF ENGINEERING AND TECHNOLOGY